

## COMMENTARY

How much does chlamydia screening cost and is it worth introducing? That is, will the savings from future disease averted offset the screening costs (will it be cost saving?), and if it will not, is the extra health "bought" by screening worth it, in terms of alternative uses of the same resources? Here, Roberts *et al*<sup>1</sup> provide a valuable critique of the literature on the cost effectiveness of chlamydia screening. Despite a large body of published work, their paper highlights the lack of appropriate methods used in the majority of previous studies.

To correctly model the full effects of screening for an infectious disease like chlamydia (including the "knock-on" effects of reduced prevalence, re-infection, and partner treatment), a well parameterised dynamic model should be used.<sup>2-3</sup> Only two out of 59 studies assessed in detail by Roberts *et al*<sup>1</sup> included a dynamic model.<sup>4-5</sup> The studies using static models are unlikely to have been able to accurately estimate the cost effectiveness of screening.<sup>6</sup>

Once the appropriate model structure is chosen, dynamic models also need to be properly parameterised to reflect both sexual behaviour and the epidemiology of chlamydia.<sup>7</sup> Given the significant uncertainty in parameter estimates, this is a difficult but necessary process if the model is to be of public health use. Roberts *et al*<sup>1</sup> show that many key assumptions in the models were not investigated with sensitivity analyses, and some of the parameter values chosen should be updated as new data have come to light. For example, the progression to pelvic inflammatory disease (PID) is the most important contributor to the estimated number of sequelae and costs, and therefore it is critical that this is accurately quantified. Cost effectiveness studies have generally assumed that 25%–30% of chlamydial infections result in PID, and only one study reviewed by Roberts *et al*<sup>1</sup> performed a thorough sensitivity analysis on this and other progression probability assumptions. However, recent evidence suggests that the proportion of women developing PID may be significantly lower, perhaps even around 1%.<sup>8-9</sup> This means that many of the previous studies may have overestimated the likely benefits (that is, prevented cases of PID and other sequelae) and cost effectiveness of screening.

As chlamydia screening is being implemented nationally across England<sup>10</sup> and other countries, it is an appropriate time to reassess its effectiveness and cost effectiveness. New studies using more appropriate methods and better parameter estimates are urgently needed to assess the most effective way to implement screening. There is no excuse for

continuing to publish cost effectiveness results using inappropriate methods or parameter estimates (for example, Ward *et al*<sup>11</sup>). As screening is introduced in phases across England, there is a window of opportunity to collect data on the incidence of PID in populations screened and unscreened and to explore how the incidence of PID may change with early treatment of acute chlamydial infection. Other data—for example, from the National Chlamydia Screening Programme (including chlamydia prevalence, effective partner notification rates, and costs of treatment), could also be used to update models. As with other public health interventions, chlamydia screening should be closely monitored and the effectiveness and cost effectiveness evaluated over time so that public funds can be spent wisely.

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